

# Rhodora

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### THE MOSSES OF MASSACHUSETTS A COUNTY CATALOGUE WITH ANNOTATIONS<sup>1</sup> FRANK J. HILFERTY

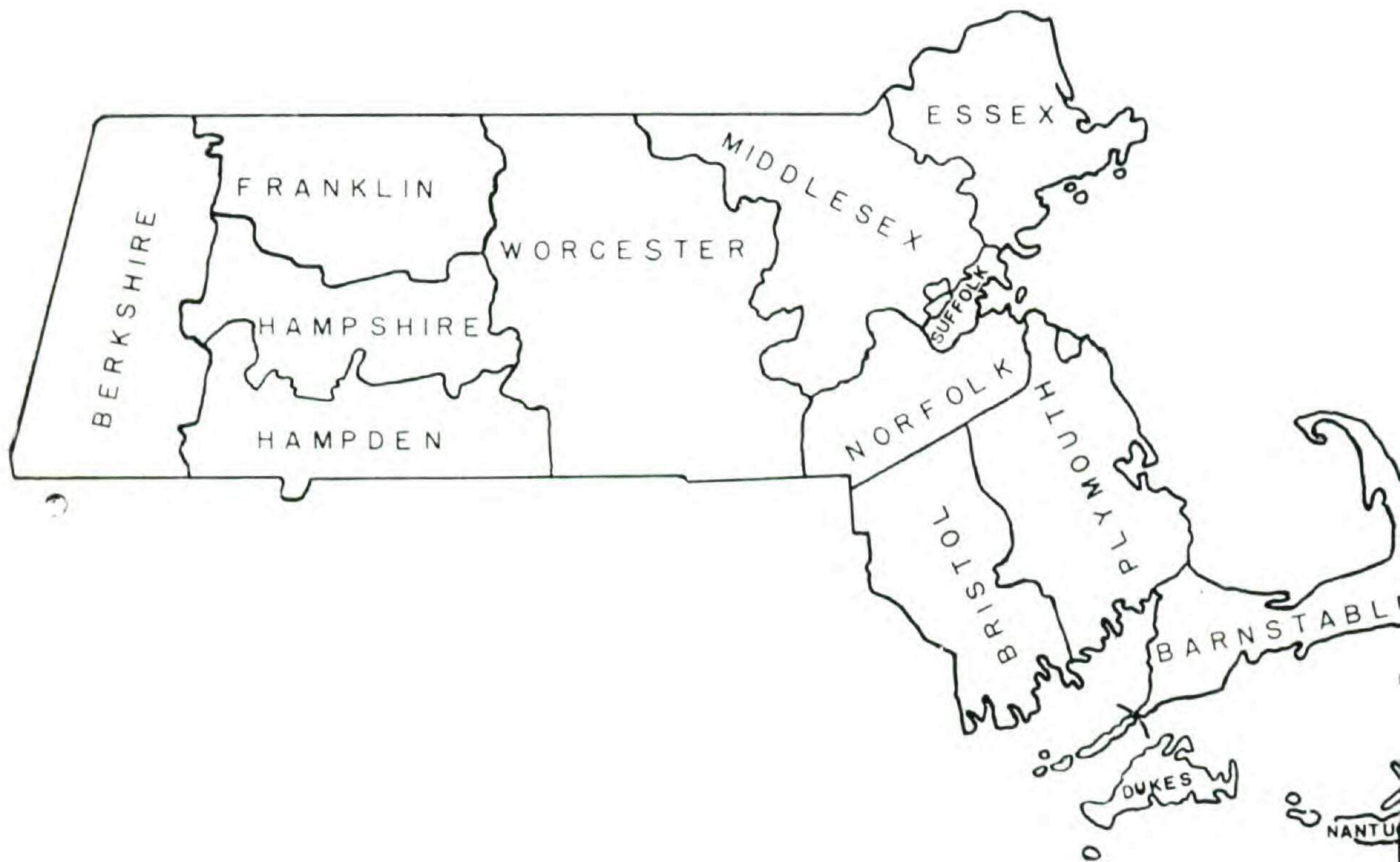
Since the early nineteenth century, amateur and professional bryologists have collected mosses in Massachusetts and published local lists, but, prior to this report, no one had attempted a catalogue of species and varieties from each of the several counties within the borders of the state. By amalgamating past publications and data obtained from specimens in several herbaria, including his own, the writer hopes to provide bryologists, ecologists, and plant geographers with a useful research tool, and, at the same time, indicate those areas where considerable bryological field work is needed.

Work on this project was begun in October of 1952 and has been pursued somewhat intermittently since that date. In all, over 3,000 specimens of mosses have been examined by the author and specialists in various groups during the past seven years. These plants have been deposited in one or more of the eight herbaria mentioned later in this paper. A preliminary report was presented to the section on Bryology at the IX International Botanical Congress (14) on August 20, 1959. The suggestions received and information given to the author by several bryologists at the Congress were most helpful in completing the work presented here. As a result of research on the mosses of Massachusetts, an article on range extensions for several taxa has been recently published in *The Bryologist* (15).

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<sup>1</sup>Grateful acknowledgement is made to the National Science Foundation for a Faculty Science Fellowship and to Harvard University for an appointment as a Research Fellow in the Gray Herbarium. These appointments have made this publication possible.

As the political, geological, and physiological features of Massachusetts have been described in numerous publications, only a brief note on these matters need be presented here. The state is located in the northeastern portion of the United States between  $41^{\circ} 15'$  and  $42^{\circ} 50'$  North latitude and extends from  $69^{\circ} 55'$  to  $73^{\circ} 30'$  West longitude. It encompasses an area of 8,266 square miles, 227 of which are water. The state is divided into counties of varying areas. (See Map 1.) There is considerable topographic variation, with elevations ranging from sea level to 3,535 feet above sea level. In the western section, hills and mountains are characteristic; the central portion is quite hilly; and a flat and somewhat undulating surface marks the eastern and southeastern regions. The numerous ponds and lakes one sees in traveling but a few miles in almost any direction, make it evident that the area was glaciated. Past glaciation and differences in parent rock account for the great diversity of soil types found in Massachusetts.



MAP. 1. The counties of Massachusetts.

TABLE 1. THE TAXONOMIC DISTRIBUTION OF THE MOSSES OF MASSACHUSETTS

<i>Family</i>	<i>Genera</i>	<i>Species</i>	<i>Varieties</i>
Sphagnaceae	1	21	5
Andreaeaceae	1	2	0
Fissidentaceae	1	11	0
Archidiaceae	1	1	0
Ditrichaceae	7	13	0
Seligeriaceae	1	1	0
Dicranaceae	4	20	1
Leucobryaceae	1	2	0
Encalyptaceae	1	2	0
Pottiaceae	13	18	0
Grimmiaceae	2	8	4
Ephemeraceae	1	3	0
Funariaceae	4	5	0
Splachnaceae	2	2	0
Tetraphidaceae	1	2	0
Bryaceae	4	16	1
Mniaceae	1	9	1
Aulacomniaceae	1	3	0
Meesiaceae	1	1	0
Bartramiaceae	2	2	1
Timmiaceae	1	1	0
Ptychomitraceae	2	2	0
Orthotrichaceae	4	14	0
Fontinalaceae	2	8	2
Climaciaceae	1	2	1
Hedwigiaceae	1	1	0
Leucodontaceae	2	4	0
Neckeraceae	3	4	0
Lembophyllaceae	1	1	0
Theliaceae	2	4	1
Fabroniaceae	1	1	0
Leskeaceae	3	5	0
Thuidiaceae	7	13	0
Amblystegiaceae	12	28	4
Brachytheciaceae	9	24	3
Entodontaceae	3	5	0
Plagiotheciaceae	1	8	1
Sematophyllaceae	3	5	0
Hypnaceae	7	18	3
Hylocomiaceae	2	5	0
Buxbaumiaceae	2	3	0
Polytrichaceae	3	13	2
Total	122	311	30

The climate is of the modified continental type and sudden changes in temperature are characteristic of the region. The January average is about 30° F and the July average is approximately 70° F. Boston's mean average temperature is 48° F and the mean is much lower in the interior of the state. Throughout the years, temperatures have ranged from 106° F in the counties of Bristol, Essex and Suffolk; to -28° in Berkshire. Precipitation averages about 40 inches per year.

At this time, the known moss flora, based upon the catalogue of county records only, consists of three orders, 42 families, 122 genera, 311 species, and 30 varieties. (See Table 1.) These numbers include previously published county reports as well as specimens collected by the writer or seen by him in one or more of the previously mentioned herbaria. The number of taxa for which reliable reports exist but for which no specimens could be found follows: four families, 19 genera, 71 species, and eight varieties.

It is interesting to note in passing that the type localities for two species are in Massachusetts, viz. *Orthotrichum stellatum* Brid. in Franklin County and *Pylaisia jamesii* Sull. & Lesq. in Suffolk County.

TABLE 2. NUMBERS OF SPECIES AND VARIETIES  
FROM THE COUNTIES OF MASSACHUSETTS

<i>County</i>	<i>Number of taxa</i>	<i>County</i>	<i>Number of taxa</i>
Dukes	14	Suffolk	143
Barnstable	45	Worcester	159
Franklin	47	Norfolk	175
Hampden	52	Berkshire	193
Nantucket	58	Essex	204
Hampshire	76	Middlesex	227
Plymouth	87	Bristol	220

Table 2 gives the distribution of species and varieties by county. The great differences in number of taxa in the several counties can be explained in part by the variation in county size, temperature, soil, and precipitation. For example, it is to be expected that a small, windswept island such as Dukes will be poor in species. The author believes, however, that the lack of sufficient exploration in certain counties is the principal reason for the apparent paucity of species in these areas.

Little ecological data are available for most herbarium specimens and the literature supplies scant information on this subject. In view of this situation, it seems best not to attempt any ecological interpretations at this time — they would not be particularly meaningful.

The arrangement of families in the annotated county check list follows that of Brotherus in *Die natürlichen Pflanzenfamilien*, Edition 2 (8). The genera, species, and varieties are arranged alphabetically under each family. Andrews' treatment of the *Sphagnales* in *North American Flora* (5) has been followed and the taxonomy of the *Andreaeales* and the *Bryales* is that of Grout et al., in *Moss Flora of North America, North of Mexico* (12). If a specific or varietal name in the annotated county check list differs from that given in the above treatments, its corresponding name is given in parenthesis following the check list name.

A list of herbaria in Massachusetts which contain most of the species and varieties of mosses listed in this publication is given below. Each herbarium listing is preceded by the code letters used to designate it in the Annotated County Catalogue.

(CUW) Herbarium of the Department of Biology, Clark University, Worcester, Massachusetts.<sup>2</sup>

(EMD) Herbarium of Mrs. Elizabeth M. Dunham, 22 Birch Road, Wellesley, Massachusetts.

(FH) Farlow Library and Herbarium of Cryptogamic Botany, Harvard University, 20 Divinity Avenue, Cambridge, Massachusetts.

(FJH) Herbarium of Frank J. Hilferty, Department of Biological Sciences, State Teachers College, Bridgewater, Massachusetts.

(MASS) Herbarium of the Department of Botany, Clark Hall, University of Massachusetts, Amherst, Massachusetts.

(NEBC) Herbarium of the New England Botanical Club, Inc., c/o The Gray Herbarium, Harvard University, 22 Divinity Avenue, Cambridge, Massachusetts.

(PM) Herbarium of the Peabody Museum, Essex Street, Salem, Massachusetts.

(WELC) Herbarium of the Department of Botany, Wellesley College, Wellesley, Massachusetts.

#### ANNOTATED COUNTY CATALOGUE

In the following catalogue, the county or counties for

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<sup>2</sup>Most of the moss specimens in this herbarium were examined when they were in the Worcester Natural History Society's Museum at 21 Cedar Street, Worcester, Massachusetts. The Society has since donated its moss collection to Clark University.

which herbarium specimens or literature reports have been seen are given for each species and variety. The numbers refer to published reports which are listed at the end of this paper under Literature Cited. Literature reports designated by their authors as "doubtful" have been excluded. Herbaria in which specimens of each taxon may be found follow the numbers.

## SPHAGNACEAE

*Sphagnum capillaceum* (Weiss) Schrank — Barnstable (EMD, FH, NEBC, WELC); Berkshire (1); Bristol (13, 21, FH, NEBC); Essex (22, 23, EMD, FH,); Hampden (CUW); Middlesex (10, 27, EMD, FH, NEBC, WELC); Norfolk (11, FH, NEBC); Suffolk (11); Worcester (WELC, MASS).

*S. capillaceum* var. *tenellum* (Schimp.) Andrews — Barnstable (FH); Essex (EMD, FJH); Norfolk (11); Suffolk (11); Worcester (WELC).

*S. compactum* DC. — Berkshire (2); Bristol (13); Middlesex (FH, NEBC); Plymouth (23); Worcester (EMD).

*S. cuspidatum* Ehrh. — Barnstable (FH); Berkshire (2); Bristol (13, NEBC); Essex (22, EMD, FH, PM); Middlesex (FH, NEBC); Nantucket (19, 20, FH, NEBC); Norfolk (11, NEBC); Suffolk (11); Worcester (25, MASS, WELC).

*S. cuspidatum* var. *torreyi* (Sull.) Braithw. — Barnstable (FH, NEBC); Bristol (FH); Essex (22, EMD, FH, NEBC, PM); Middlesex (EMD, FH, FJH, NEBC); Norfolk (EMD, FH, NEBC); Suffolk (NEBC).

*S. cyclophyllum* Sull. & Lesq. — Bristol (13).

*S. fimbriatum* Wils. — Barnstable (NEBC); Bristol (21); Essex (FH, NEBC, PM); Middlesex (FH, NEBC); Norfolk (FH, NEBC); Worcester (EMD, FH, NEBC).

*S. flavicomans* (Card.) Warnst. — Barnstable (15, FH); Norfolk (15, FH, NEBC).

*S. fuscum* (Schimp.) Klinggr. — Berkshire (6).

*S. girgensohnii* Russ. — Barnstable (FH, NEBC); Berkshire (CUW); Essex (PM); Middlesex (EMD, FH); Norfolk (11, FH); Worcester (NEBC).

*S. imbricatum* Hornsch. — Barnstable (FH, NEBC); Bristol (FH, NEBC); Dukes (FH, NEBC); Essex (FH, PM); Middlesex (EMD, FH, NEBC); Nantucket (FH); Norfolk (11, FH, FJH, NEBC); Suffolk (11, FH).

*S. imbricatum* var. *affine* (Ren. & Card.) Warnst. — Barnstable (15, NEBC); Essex (15, FH, NEBC, PM); Middlesex (15, EMD, FH, NEBC); Norfolk (15, NEBC); Suffolk (15, NEBC); Worcester (15, EMD, FH).

*S. macrophyllum* Bernh. — Barnstable (15, NEBC); Plymouth (15, NEBC).

*S. magellanicum* Brid. — Barnstable (FH); Berkshire (2); Essex (FH, NEBC, PM); Middlesex (EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, FJH, NEBC); Suffolk (11); Worcester (FH).

*S. palustre* L. — Barnstable (FH, NEBC, WELC); Berkshire (1, 16, FH, NEBC); Bristol (13, 21, NEBC); Dukes (WELC); Essex (22, 23, EMD, FH, NEBC, PM, WELC); Hampshire (MASS); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20, FH, NEBC); Norfolk (11, CUW, FH, NEBC, WELC); Plymouth (WELC); Suffolk (11, FH, NEBC); Worcester (25, EMD, FH, FJH, MASS, NEBC).

*S. papillosum* Lindb. — Barnstable (FH, NEBC); Dukes (FH, NEBC); Essex (22); Middlesex (EMD, FH); Norfolk (NEBC).

*S. plumulosum* Röhl. — Barnstable (15, NEBC); Essex (15, NEBC, PM); Norfolk (NEBC); Worcester (15, CUW).

*S. recurvum* P. Beauv. — Barnstable (FH, NEBC); Berkshire (2); Bristol (FH); Dukes (WELC); Essex (EMD, FH, NEBC, PM); Hampden (FH, NEBC, WELC); Middlesex (EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Suffolk (11); Worcester (EMD, FH).

*S. recurvum* var. *tenue* Klinggr. — Nantucket (20).

*S. robustum* (Russ.) Roell. — Berkshire (6).

*S. squarrosus* Crom. — Berkshire (1, FH); Bristol (13, 21); Essex (EMD, NEBC); Middlesex (10, 22, 23, EMD, FH); Nantucket (19, FH); Norfolk (EMD, WELC).

*S. subsecundum* Nees — Barnstable (FH, NEBC); Bristol (13, 21); Essex (22, EMD, FH, NEBC, PM); Hampden (NEBC); Middlesex (10, EMD, FH, NEBC); Nantucket (FH); Norfolk (11, FH, NEBC, WELC); Suffolk (11, FH, NEBC); Worcester (EMD).

*S. tenellum* Pers. — Essex (15, FH, NEBC, PM); Middlesex (15, FH, NEBC); Norfolk (15, FH, NEBC); Suffolk (15, FH, NEBC).

*S. tenerum* Sull. & Lesq. — Barnstable (NEBC); Berkshire (2).

*S. teres* (Schimp.) Aongstr. — Essex (15, PM); Hampden (15, NEBC); Middlesex (15, EMD, FH); Norfolk (15, FH, NEBC); Worcester (15, FH).

*S. warnstorffianum* DuRietz (*S. warnstorffii*) — Berkshire (6).

#### ANDREAEACEAE

*Andreaea rothii* Web. & Mohr — Berkshire (WELC); Bristol (13, NEBC); Essex (EMD, FH, NEBC); Middlesex (FH, NEBC); Norfolk (11); Suffolk (11, FH, NEBC); Worcester (EMD, FJH).

*A. rupestris* Hedw. — Berkshire (4); Norfolk (11, FH).

#### FISSIDENTACEAE

*Fissidens adiantoides* Hedw. — Berkshire (1); Bristol (13, NEBC); Essex (22, PM); Franklin (MASS); Hampden (WELC); Middlesex (10, 11, 23, 27, EMD, FH, FJH, NEBC, WELC); Norfolk (FH); Plymouth (23); Suffolk (11); Worcester (23).

*F. bryoides* Hedw. — Bristol (13); Franklin (FH); Middlesex (FH); Norfolk (FH).

*F. bushii* Card. & Thér. — Bristol (15, NEBC).

*F. cristatus* Wils. — Berkshire (1, EMD); Bristol (NEBC, WELC); Essex (FH, NEBC); Hampshire (MASS); Middlesex (FH); Norfolk (WELC); Worcester (FH).

*F. debilis* Schwaegr. (*F. julianus*) — Essex (FH, NEBC, PM); Middlesex (11, CUW); Plymouth (EMD); Worcester (CUW).

*F. exiguus* Sull. — Middlesex (10, 27).

*F. minutulus* Sull. — Berkshire (4); Bristol (13, NEBC); Essex (EMD); Middlesex (NEBC); Worcester (FH, NEBC).

*F. osmundioides* Hedw. — Berkshire (6); Bristol (13, NEBC); Essex (22, FH, NEBC, PM); Hampden (WELC); Middlesex (10, 11, EMD, FH, FJH, NEBC); Norfolk (WELC); Suffolk (28).

*F. subbasilaris* Hedw. — Bristol (13).

*F. taxifolius* Hedw. — Berkshire (2, NEBC); Essex (22, NEBC); Middlesex (11, FH); Suffolk (11, NEBC, WELC).

*F. viridulus* (Web. & Mohr) Wahlenb. — Middlesex (15, FH, WELC); Norfolk (15, WELC).

#### ARCHIDIACEAE

*Archidium alternifolium* (Hedw.) Schimp. — Bristol (13).

#### DITRICHACEAE

*Bruchia flexuosa* (Sw.) C. Muell. — Bristol (13); Norfolk (FH); Suffolk (NEBC).

*B. sullivanti* Aust. — Bristol (13); Essex (FH, NEBC); Middlesex (EMD, FH); Norfolk (FH); Suffolk (FH); Worcester (WELC).

*Ceratodon purpureus* (Hedw.) Brid. — Barnstable (NEBC); Berkshire (1); Bristol (13, 21, FH, NEBC, WELC); Essex (22, FH, NEBC, PM); Franklin (NEBC); Hampden (FH, NEBC); Hampshire (CUW, NEBC); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20, FH); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (NEBC); Suffolk (11, 28, FH, NEBC); Worcester (CUW, FH, NEBC, WELC).

*Distichium capillaceum* (Hedw.) B. S. G. — Essex (22, 23); Plymouth (23).

*Ditrichum lineare* (Sw.) Lindb. — Berkshire (2); Bristol (13, NEBC); Essex (FH); Hampden (MASS); Middlesex (10, 27, FH, NEBC); Norfolk (11, FH, WELC); Suffolk (11, NEBC, WELC).

*D. pallidum* (Hedw.) Hamp. — Barnstable (FH); Berkshire (16); Bristol (13, FH, NEBC); Essex (22, EMD, FH, NEBC); Franklin (NEBC); Hampden (FH); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (FH); Norfolk (11, FH, WELC); Plymouth (23, FH); Suffolk (11, 23, 28, NEBC); Worcester (FH, NEBC, WELC).

*D. pusillum* (Hedw.) Britt. — Berkshire (CUW); Bristol (13, NEBC); Essex (22, FH, PM); Hampden (WELC); Hampshire (EMD); Middlesex (10, 27, EMD, FH, NEBC); Norfolk (FH, FJH, NEBC, WELC); Suffolk (11, CUW, NEBC); Worcester (WELC).

*Pleuridium acuminatum* Lindb. — Bristol (21); Nantucket (20).

*P. palustre* (Bruch & Schimp.) B. S. G. — Bristol (NEBC).

*P. subulatum* (Hedw.) Lindb. — Bristol (13); Essex (FH, NEBC); Middlesex (EMD, FH, WELC); Norfolk (EMD, FH, WELC); Plymouth (23); Suffolk (EMD, FH); Worcester (CUW, NEBC).

*Saelania glaucescens* (Hedw.) Broth. — Bristol (13, NEBC).

*Trematodon ambiguus* (Hedw.) Hornsch. — Bristol (13, NEBC); Essex (FH, NEBC); Worcester (MASS).

*T. longicollis* Michx. — Franklin (16); Suffolk (NEBC).



## SELIGERIACEAE

*Blindia acuta* (Hedw.) B. S. G. — Suffolk (23).

## DICRANACEAE

*Dicranella cerviculata* (Hedw.) Schimp. — Worcester (15, NEBC, WELC).

*D. heteromalla* (Hedw.) Schimp. — Berkshire (1, 16, CUW, FH, NEBC); Bristol (13, 21, NEBC); Essex (FH, NEBC); Hampden (NEBC); Middlesex (10, 27, FH, NEBC); Norfolk (11, FH, FJH, NEBC); Plymouth (BC, NEBC); Suffolk (11, FH, NEBC); Worcester (FH, NEBC).

*D. heteromalla* var. *orthocarpa* (Hedw.) Par. — Barnstable (FH); Berkshire (16); Bristol (EMD, FH); Essex (EMD, FH, NEBC, PM); Hampshire (EMD, FJH); Middlesex (EMD, NEBC); Nantucket (20); Norfolk (FH, NEBC, WELC); Worcester (WELC).

*D. rufescens* (Sm.) Schimp. — Bristol (13).

*D. schreberiana* (Hedw.) Schimp. (*D. schreberi*) — Berkshire (15, NEBC).

*D. varia* (Hedw.) Schimp. — Berkshire (1); Bristol (13); Essex (NEBC, PM); Hampshire (MASS); Middlesex (23, 27); Plymouth (23); Worcester (WELC).

*Dicranum bergeri* Bland. — Berkshire (3); Essex (17, 22, FH, NEBC); Middlesex (10, CUW, FH); Nantucket (FH); Norfolk (11); Suffolk (11, CUW); Worcester (EMD, FH, NEBC).

*D. bonjeanii* De Not. — Essex (17).

*D. condensatum* Hedw. — Bristol (EMD); Essex (EMD); Nantucket (20).

*D. drummondii* C. Muell. — Berkshire (CUW); Bristol (13, NEBC); Essex (17, FH, NEBC, PM); Middlesex (10, NEBC); Norfolk (CUW, FH, NEBC); Plymouth (FH); Suffolk (NEBC); Worcester (NEBC).

*D. flagellare* Hedw. — Barnstable (FJH); Berkshire (2); Bristol (13, 21, FH, NEBC); Dukes (NEBC); Essex (22, 23, FH, NEBC, PM); Franklin (FH); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, EMD, FH, WELC); Plymouth (23, FH); Suffolk (11); Worcester (CUW, FH).

*D. fulvum* Hook. — Berkshire (2, CUW, FH, NEBC, WELC); Bristol (13, 21); Essex (22, FH, PM); Hampden (FH, WELC); Hampshire (NEBC); Middlesex (10, EMD, FH, NEBC); Norfolk (11, CUW, FH, NEBC, WELC); Suffolk (11, NEBC); Worcester (FH, NEBC).

*D. fuscescens* Turn. — Barnstable (FH); Berkshire (1); Bristol (13); Dukes (EMD); Essex (22, FH, NEBC); Middlesex (27); Norfolk (11, FH, WELC); Suffolk (11, FH).

*D. montanum* Hedw. — Berkshire (3, CUW); Bristol (13, 21); Essex (17, 22, CUW, FH, NEBC, PM); Middlesex (EMD, FH); Norfolk (11, FH, NEBC); Suffolk (11); Worcester (CUW, FH, NEBC, WELC).

*D. muehlenbeckii* B. S. G. — Berkshire (15, FJH).

*D. rugosum* (Hoffm.) Brid. — Bristol (13, NEBC); Essex (17, 22, 23, FH, NEBC, PM); Middlesex (10, 23, 27, NEBC); Norfolk (11, FH); Plymouth (FH); Suffolk (11, NEBC); Worcester (FH, NEBC).

*D. scoparium* Hedw. — Barnstable (FH, FJH, NEBC); Berkshire (1, 2,

7, 16); Bristol (13, 21, FH, NEBC); Dukes (WELC); Essex (17, 22, 23, CUW, FH, NEBC, PM); Franklin (MASS); Hampden (FH, NEBC); Middlesex (10, 23, 27, EMD, FH, FJH, NEBC, WELC); Nantucket (20, FH, NEBC); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (23, FH, NEBC); Suffolk (11, CUW, NEBC); Worcester (CUW, FH, MASS, NEBC).

*D. spurium* Hedw. — Bristol (13); Essex (EMD, FH); Middlesex (10, NEBC); Norfolk (11, CUW, FH, NEBC); Suffolk (11, NEBC).

*D. viride* (Sull. & Lesq.) Lindb. — Berkshire (3); Essex (17, FH, NEBC); Middlesex (10, NEBC); Norfolk (CUW, FH, NEBC); Suffolk (NEBC); Worcester (CUW).

*Oncophorus wahlenbergii* Brid. — Bristol (13); Essex (FH); Middlesex (FH, WELC).

*Paraleucobryum longifolium* (Hedw.) Loesk. — Berkshire (1, CUW, FH, NEBC); Essex (FH); Middlesex (10, 23).

## LEUCOBRYACEAE

*Leucobryum albidum* (Brid.) Lindb. — Bristol (13); Middlesex (10, 27, NEBC).

*L. glaucum* (Hedw.) Schimp. — Barnstable (NEBC); Berkshire (1, 16, CUW, NEBC); Bristol (13, 21, NEBC); Essex (22, 23, FH, FJH, NEBC, PM, WELC); Hampden (NEBC); Hampshire (EMD, MASS); Middlesex (10, 11, 27, EMD, FH, NEBC); Nantucket (20, FH); Norfolk (11, CUW, FH, FJH, WELC); Suffolk (11, 23, NEBC); Worcester (EMD, FH, NEBC).

## ENCALYPTACEAE

*Encalypta ciliata* Hedw. — Berkshire (EMD); Franklin (16).

*E. streptocarpa* Hedw. — Hampshire (15, MASS); Worcester (15, CUW, EMD).

## POTTIACEAE

*Acaulon muticum* (Hedw.) C. Muell. — Bristol (13).

*A. triquetrum* (Spruc.) C. Muell. — Bristol (13).

*Astomum muehlenbergianum* (Sw.) Grout — Bristol (13); Middlesex (EMD, FH); Norfolk (NEBC); Suffolk (EMD, FH).

*Barbula convoluta* Hedw. — Bristol (13).

*B. unguiculata* Hedw. — Berkshire (1); Bristol (13, NEBC); Essex (FH, PM); Hampshire (MASS); Middlesex (10, 27, EMD, FH); Norfolk (FH, NEBC); Plymouth (23); Suffolk (11).

*Bryoerythrophyllum recurvirostre* (Hedw.) Chen (*Didymodon recurvirostris*) — Plymouth (23).

*Didymodon rigidulus* Hedw. — Berkshire (4).

*Gymnostomum aeruginosum* Sm. — Berkshire (6).

*Hymenostylium recurvirostrum* (Hedw.) Dix. (*Gymnostomum recurvirostrum*) — Berkshire (6).

*Phascum cuspidatum* Hedw. — Bristol (13); Nantucket (20).

*Pottia truncata* (Hedw.) Fuernr. — Bristol (13); Essex (22, 23, NEBC, PM); Middlesex (10, 23, CUW, EMD, FH, NEBC); Norfolk (11, EMD, FH, NEBC); Plymouth (FH); Suffolk (11, FH, NEBC).

*Tortella humilis* (Hedw.) Jenn. (*T. caespitosa*) — Bristol (13, NEBC); Essex (NEBC, PM); Hampden (FH, WELC); Middlesex (10, 27, EMD, NEBC); Norfolk (11, FH, FJH, NEBC, WELC).

*T. tortuosa* (Hedw.) Limpr. — Berkshire (15, EMD); Essex (15, FH, NEBC); Franklin (15, MASS); Hampshire (15, MASS).

*Tortula papillosa* Wils. — Bristol (13, 21); Essex (22, FH, NEBC); Middlesex (EMD, FH, NEBC); Norfolk (11, FH, NEBC); Suffolk (NEBC).

*T. ruralis* (Hedw.) Sm. — Essex (22).

*Trichostomum tenuirostre* (Hook. & Tayl.) Lindb. (*T. cylindricum*) — Berkshire (6).

*Weisia controversa* Hedw. (*W. viridula*) — Berkshire (16, CUW, WELC); Bristol (13, NEBC); Essex (22, EMD, FH, PM); Hampshire (MASS); Middlesex (10, 23, 27, FH, NEBC); Norfolk (11, FH, WELC); Plymouth (23, NEBC); Suffolk (11, FH, NEBC).

*W. microstoma* (Hedw.) C. Muell. — Middlesex (12).

#### GRIMMIACEAE

*Grimmia apocarpa* Hedw. — Berkshire (2, FH, NEBC); Bristol (13, NEBC); Essex (22, 23, NEBC, PM); Middlesex (10, 27, EMD, FH, NEBC, WELC); Norfolk (11, FH, NEBC, WELC); Suffolk (11, WELC); Worcester (CUW, WELC).

*G. apocarpa* var. *alpicola* (Hedw.) Hartm. (*G. alpicola*) — Berkshire (CUW); Bristol (13); Essex (12); Middlesex (NEBC); Worcester (CUW, NEBC).

*G. apocarpa* var. *conferta* (Funck) Spreng. — Essex (FH, WELC); Hampshire (MASS); Middlesex (10, 27, EMD, NEBC, WELC); Norfolk (11, FH, NEBC, WELC); Suffolk (11, CUW, FH, NEBC).

*G. doniana* Sm. — Hampshire (15, MASS).

*G. laevigata* (Brid.) Brid. — Bristol (13).

*G. maritima* Turn. — Bristol (13); Essex (22, 23, CUW, EMD, FH, NEBC, PM).

*G. olneyi* Sull. — Bristol (13, NEBC); Essex (FH); Middlesex (10, NEBC); Norfolk (11, FH, NEBC, WELC); Suffolk (11, CUW, FH, NEBC, WELC).

*G. pilifera* P. Beauv. — Bristol (13, NEBC); Essex (FH); Middlesex (10, NEBC); Norfolk (11, 23, CUW, NEBC); Plymouth (23); Suffolk (11, NEBC, WELC).

*Rhacomitrium aciculare* (Hedw.) Brid. — Berkshire (1, FH, NEBC); Bristol (13, NEBC); Essex (FH); Hampshire (MASS); Middlesex (FH); Norfolk (11, CUW, FH, NEBC, WELC); Suffolk (11); Worcester (CUW, NEBC).

*R. heterostichum* (Hedw.) Brid. — Berkshire (6).

*R. heterostichum* var. *ramulosum* (Lindb.) Jones — Bristol (13).

*R. heterostichum* var. *sudeticum* (Funck) Jones — Berkshire (2, FJH, WELC); Bristol (13); Essex (FH); Middlesex (10, 11, WELC); Norfolk (11, FH, NEBC, WELC); Plymouth (FH); Suffolk (11, WELC); Worcester (18).

#### EPHEMERACEAE

*Ephemerum crassinervium* (Schwaegr.) Hamp. — Bristol (13).

*E. serratum* (Hedw.) Hamp. — Essex (NEBC); Middlesex (10, 12, FH).

*E. spinulosum* Schimp. — Bristol (15, NEBC); Essex (15, PM); Middlesex (15, EMD, FH).

## FUNARIACEAE

*Aphanorhegma serratum* (Hook. & Wils.) Sull. — Bristol (13); Middlesex (10, 23).

*Funaria flavicans* Michx. — Berkshire (16).

*F. hygrometrica* Hedw. — Barnstable (NEBC); Berkshire (1, 16); Bristol (13, 21, FH, NEBC); Essex (22, 23, FH, NEBC, PM); Middlesex (10, 11, 23, 27, EMD, FH, FJH, NEBC); Nantucket (20); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (23); Suffolk (11, 28, FH, NEBC, WELC); Worcester (FH, MASS, NEBC, WELC).

*Physcomitrella patens* (Hedw.) B. S. G. (*Aphanorhegma patens*) — Middlesex (10, 23).

*Physcomitrium pyriforme* Brid. (*P. turbinatum*) — Berkshire (1); Bristol (13, 21, NEBC); Essex (22, 23, NEBC, PM); Hampshire (WELC); Middlesex (10, EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, FJH, NEBC, WELC); Suffolk (11, 28, CUW, NEBC); Worcester (CUW, MASS, NEBC).

## SPLACHNACEAE

*Splachnum ampullaceum* Hedw. — Essex (22, 23); Hampshire (NEBC).

*Tetraplodon pennsylvanicus* (Brid.) Grout — Bristol (13); Worcester (NEBC).

## TETRAPHIDACEAE

*Tetraphis geniculata* Girgens. — Bristol (13); Essex (FH).

*T. pellucida* Hedw. — Berkshire (1, FH, NEBC); Bristol (21, NEBC); Essex (22, 23, FH, NEBC, PM); Franklin (MASS); Hampden (NEBC, WELC); Hampshire (MASS); Middlesex (10, 27, EMD, FH, NEBC, WELC); Nantucket (20); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (23, NEBC); Suffolk (11); Worcester (EMD, FH, NEBC).

## BRYACEAE

*Bryum angustirete* Kindb. (*B. pendulum*) — Berkshire (6).

*B. argenteum* Hedw. — Berkshire (1, 16); Bristol (13, 21, FH, NEBC); Essex (22, 23, FH); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, FJH, WELC); Plymouth (NEBC); Suffolk (11, NEBC); Worcester (EMD, FH, WELC).

*B. argenteum* var. *lanatum* (P. Beauv.) B. S. G. — Norfolk (15, FH).

*B. caespiticium* Hedw. — Berkshire (1, 16); Bristol (13, NEBC); Essex (22, 23, FH, NEBC, PM); Hampshire (CUW, FH); Middlesex (10, 27, FH, NEBC); Norfolk (11, FH, NEBC); Plymouth (NEBC); Suffolk (11, 28, NEBC).

*B. capillare* Hedw. — Berkshire (3, CUW); Bristol (13, 21); Essex (FH); Middlesex (10, 23); Norfolk (11, FH); Suffolk (11); Worcester (CUW, WELC).

*B. creberrimum* Tayl. (*B. cuspidatum*) — Berkshire (3, 16); Bristol (13); Essex (22); Middlesex (10, 27).

*B. pseudotriquetrum* (Hedw.) Schwaegr. (*B. bimum*) — Berkshire (1, 3, CUW, FH, NEBC); Bristol (13, NEBC); Essex (22, CUW, FH, PM);

Hampden (FH); Middlesex (10, 27, FH); Norfolk (11, CUW, FH, NEBC); Plymouth (FH); Suffolk (11, NEBC); Worcester (MASS).

*Leptobryum pyriforme* (Hedw.) Schimp. — Berkshire (1, CUW, NEBC); Bristol (13, NEBC); Essex (FH, NEBC); Hampshire (EMD, MASS); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (FH, WELC); Plymouth (NEBC); Worcester (WELC).

*Pohlia annotina* (Hedw.) Loesk. — Berkshire (3); Bristol (13, 21, NEBC); Essex (NEBC); Norfolk (NEBC); Worcester (EMD, FJH).

*P. bulbifera* (Warnst.) Warnst. — Essex (12).

*P. cruda* (Hedw.) Lindb. — Berkshire (3).

*P. elongata* Hedw. — Berkshire (1).

*P. nutans* (Hedw.) Lindb. — Berkshire (1, 16); Bristol (13, 21, NEBC); Essex (22, FH, NEBC, PM); Franklin (NEBC); Hampshire (EMD, FH, NEBC); Middlesex (10, EMD, FH, NEBC, WELC); Nantucket (20); Norfolk (11, FH, FJH, WELC); Plymouth (23, FH); Suffolk (11, FH, NEBC); Worcester (CUW, NEBC, WELC).

*P. pulchella* (Hedw.) Lindb. — Hampshire (15, FH); Middlesex (15, FH, NEBC); Norfolk (15, EMD, FH, NEBC); Suffolk (15, NEBC).

*P. rothii* (Corr.) Broth. — Berkshire (6, 12).

*P. wahlenbergii* (Web. & Mohr) Andrews — Bristol (21).

*Rhodobryum roseum* (Hedw.) Limpr. — Berkshire (1, 16, FH); Bristol (13, FJH); Essex (22, 23, FH, FJH); Franklin (FH); Hampshire (MASS); Middlesex (10, 23, 27, FH, FJH); Norfolk (11, CUW, FH, FJH, WELC); Suffolk (11, FJH); Worcester (CUW, EMD, NEBC).

#### MNIACEAE

*Mnium affine* Bland. — Berkshire (1, FH, NEBC); Bristol (13, 21, FH, NEBC); Essex (FH); Hampden (FH, NEBC); Middlesex (10, 27, EMD, NEBC, WELC); Nantucket (19, 20); Norfolk (11, NEBC); Plymouth (23, NEBC); Suffolk (11, 23, 28, NEBC); Worcester (CUW, MASS, NEBC, WELC).

*M. cinclidioides* Hueb. — Bristol (13, EMD, NEBC); Middlesex (EMD, FH, NEBC); Nantucket (20); Norfolk (CUW, NEBC, WELC); Worcester (CUW, EMD, FH, NEBC).

*M. cuspidatum* Hedw. — Berkshire (1, CUW); Bristol (13, 21, FH, NEBC); Dukes (WELC); Essex (22, 23, FH, NEBC, PM); Franklin (FH); Hampden (WELC); Hampshire (NEBC); Middlesex (10, 23, 27, EMD, FH, NEBC, WELC); Norfolk (11, FH, NEBC, WELC); Plymouth (23, NEBC); Suffolk (11, NEBC); Worcester (CUW, NEBC).

*M. hornum* Hedw. — Bristol (13, 21, FH, NEBC); Essex (22, 23, CUW, FH, NEBC, PM); Hampshire (MASS); Middlesex (10, 23, FH, NEBC); Nantucket (20); Norfolk (11, FH, NEBC); Plymouth (23, FH); Suffolk (11, 28, NEBC); Worcester (CUW, EMD, FH, NEBC, WELC).

*M. orthorhynchum* Brid. — Berkshire (6).

*M. punctatum* Hedw. — Berkshire (1, CUW, NEBC); Bristol (13, 21, NEBC); Essex (22, 23, NEBC, PM); Middlesex (NEBC, WELC); Nantucket (19); Norfolk (11, NEBC); Plymouth (23); Suffolk (11); Worcester (CUW, NEBC, WELC).

*M. punctatum* var. *elatum* Schimp. — Berkshire (1, CUW, WELC);

Hampshire (MASS); Middlesex (EMD); Plymouth (NEBC); Worcester (EMD).

*M. serratum* Brid. (*M. marginatum*) — Berkshire (1); Hampshire (NEBC); Middlesex (10, 23, FH, WELC); Plymouth (NEBC).

*M. spinulosum* B. S. G. — Berkshire (4, FH).

*M. stellare* Hedw. — Berkshire (1); Bristol (13); Middlesex (10, 27).

#### AULACOMNIACEAE

*Aulacomnium androgynum* (Hedw.) Schwaegr. — Barnstable (FH); Bristol (13, NEBC); Essex (22, PM); Middlesex (10, 23, NEBC); Plymouth (23).

*A. heterostichum* (Hedw.) B. S. G. — Berkshire (1); Bristol (13, FH, NEBC, WELC); Essex (22, FH, PM); Franklin (FH, NEBC); Hampden (FH); Middlesex (10, 27, EMD, FJH, NEBC, WELC); Norfolk (11, FH, NEBC, WELC); Plymouth (23); Suffolk (11, 23); Worcester (EMD, NEBC, WELC).

*A. palustre* (Hedw.) Schwaegr. — Barnstable (FH, NEBC); Berkshire (FH); Bristol (13, 21, FH, NEBC); Essex (22, FH, FJH, NEBC, PM); Hampden (FH); Middlesex (10, 23, 27, EMD, FH, FJH, NEBC); Nantucket (20, FH, FJH, NEBC); Norfolk (11, FH, FJH, NEBC); Plymouth (EMD, FH); Suffolk (11, FH, NEBC); Worcester (CUW, EMD, NEBC, WELC).

#### MEESIACEAE

*Meesia longiseta* Hedw. — Berkshire (16).

#### BARTRAMIACEAE

*Bartramia pomiformis* Hedw. — Berkshire (1, CUW, FH); Bristol (FH, NEBC); Essex (22, 23, FH, NEBC, PM); Franklin (MASS); Hampden (FH, WELC); Hampshire (EMD, MASS, NEBC); Middlesex (10, 11, 27, EMD, FH, NEBC); Norfolk (11, FH, FJH, NEBC, WELC); Suffolk (11); Worcester (CUW, FH, MASS, NEBC, WELC).

*B. pomiformis* var. *crispa* B. S. G. — Essex (23); Hampden (FH); Middlesex (FH); Plymouth (23).

*Philonotis fontana* (Hedw.) Brid. — Barnstable (FH); Berkshire (1); Bristol (13, 21, NEBC); Dukes (WELC); Essex (22, 23, NEBC, PM); Hampden (FH); Hampshire (MASS); Middlesex (10, 11, 27, EMD, FH, NEBC, WELC); Nantucket (20); Norfolk (11, EMD, FH, WELC); Suffolk (11, FH, NEBC); Worcester (CUW, FH, NEBC, WELC).

#### TIMMIACEAE

*Timmia megapolitana* Hedw. — Berkshire (16, NEBC); Hampshire (NEBC).

#### PTYCHOMITRIACEAE

*Campylostelium saxicola* (Web. & Mohr) B. S. G. — Bristol (13, FH, NEBC); Essex (FH, NEBC).

*Ptychomitrium incurvum* (Muhlenb.) Sull. — Bristol (13, NEBC); Middlesex (NEBC).

#### ORTHOTRICHACEAE

*Amphidium lapponicum* (Hedw.) Schimp. — Berkshire (6).

*Drummondia prorepens* (Hedw.) Jenn. — Berkshire (1); Bristol (13, NEBC); Essex (22, 23, NEBC, PM); Hampshire (MASS); Middlesex

(10, 23); Norfolk (11, CUW, FH, NEBC); Suffolk (FH); Worcester (NEBC, WELC).

*Orthotrichum anomalum* Hedw. — Bristol (13, NEBC); Essex (22, 23, PM).

*O. lescurii* Aust. — Essex (22); Suffolk (11).

*O. obtusifolium* Brid. — Berkshire (6, NEBC); Bristol (13); Middlesex (10, 27, FH, WELC); Suffolk (WELC).

*O. ohioense* Sull. & Lesq. — Norfolk (NEBC); Suffolk (NEBC); Worcester (NEBC).

*O. pumilum* Dicks. — Bristol (21).

*O. pusillum* Mitt. — Middlesex (10).

*O. sordidum* Sull. & Lesq. — Berkshire (WELC); Essex (EMD); Hampshire (FJH); Middlesex (10, EMD); Norfolk (11, FH, NEBC); Suffolk (11); Worcester (NEBC, WELC);

*O. stellatum* Brid. — Berkshire (NEBC); Essex (NEBC); Franklin (12).

*O. strangulatum* P. Beauv. — Berkshire (1); Bristol (13); Hampden (WELC); Hampshire (MASS); Middlesex (10, 27, EMD, NEBC); Norfolk (11, NEBC); Suffolk (11, 28, NEBC); Worcester (MASS).

*Ulotia crispa* (Hedw.) Brid. — Berkshire (1, CUW); Bristol (13, NEBC); Essex (22, 23, FH); Middlesex (10, EMD, FH, WELC); Nantucket (20); Norfolk (11, CUW, FH, NEBC); Plymouth (23, WELC); Suffolk (11, NEBC); Worcester (FH, NEBC).

*U. hutchinsiae* (Sm.) Hammar (*U. americana*) — Berkshire (1, CUW, FH, NEBC); Bristol (13, 21, FH); Essex (22, 23, FH, NEBC, PM); Hampden (FH); Hampshire (NEBC); Middlesex (10, 11, 23, 27, EMD, FH, NEBC, WELC); Norfolk (11, CUW, FH, FJH, WELC); Plymouth (FH, NEBC, WELC); Suffolk (11, 28, FH, NEBC, WELC); Worcester (CUW, FH, MASS, NEBC, WELC).

*U. ludwigii* Brid. — Berkshire (1, CUW); Bristol (13, NEBC); Essex (FH); Norfolk (11, CUW); Suffolk (11); Worcester (NEBC).

#### FONTINALACEAE

*Dichelyma capillaceum* (Myr.) B. S. G. — Bristol (13, EMD, FH, NEBC); Essex (17, 22, FH, FJH, NEBC, PM); Middlesex (10, 27, EMD, FH, NEBC, WELC); Nantucket (20); Norfolk (CUW, FH, WELC); Plymouth (23, NEBC); Suffolk (NEBC); Worcester (25, CUW, FH, MASS, NEBC).

*D. pallescens* B. S. G. — Bristol (13, NEBC); Middlesex (10, FH); Nantucket (19); Plymouth (23); Suffolk (11, CUW).

*Fontinalis antipyretica* Hedw. — Berkshire (16); Middlesex (23, FH, NEBC); Nantucket (19); Plymouth (23).

*F. antipyretica* var. *gigantea* Sull. — Barnstable (EMD); Berkshire (FH); Bristol (13, FH, NEBC); Essex (22, FH, NEBC, PM); Hampshire (MASS); Middlesex (10, EMD, FH, NEBC, WELC); Norfolk (FH, NEBC, WELC); Plymouth (NEBC); Suffolk (11, NEBC); Worcester (25, FH, MASS).

*F. dalecarlica* B. S. G. — Berkshire (FH); Bristol (13, EMD, NEBC);

Essex (FH); Norfolk (EMD, FJH, WELC); Plymouth (23); Suffolk (EMD); Worcester (25, CUW, FH, MASS).

*F. flaccida* Ren. & Card. — Bristol (13, EMD, FJH); Worcester (EMD, FJH, NEBC).

*F. lescurii* Sull. — Bristol (13, EMD, NEBC); Essex (17, 22, NEBC, PM); Norfolk (EMD, FH); Suffolk (11, NEBC); Worcester (EMD, FJH).

*F. novae-angliae* Sull. — Berkshire (FH, NEBC); Bristol (13, 21, FH); Essex (22, FH, NEBC); Hampshire (MASS); Middlesex (EMD, FH, WELC); Nantucket (20); Norfolk (WELC); Suffolk (11); Worcester (25, EMD, FJH).

*F. novae-angliae* var. *latifolia* Card. — Essex (FH); Middlesex (FH); Norfolk (FH).

*F. sullivanti* Lindb. — Essex (NEBC, WELC); Norfolk (FH, NEBC); Worcester (25, FH).

## CLIMACIACEAE

*Climacium americanum* Brid. — Berkshire (2, 16, FH, NEBC); Bristol (13, EMD, FH, NEBC); Essex (22, 23, EMD, FH, NEBC, PM); Hampden (FH, NEBC); Hampshire (MASS); Middlesex (10, 11, 23, 27, EMD, FH, NEBC, WELC); Norfolk (11, EMD, FH, FJH, NEBC, WELC); Plymouth (23); Suffolk (11, NEBC); Worcester (CUW, FH, MASS).

*C. americanum* var. *kindbergii* Ren. & Card. (*C. kindbergii*) — Bristol (21, FH); Essex (FH, NEBC, WELC); Hampden (NEBC); Middlesex (EMD, FH, NEBC); Nantucket (20); Norfolk (FH); Worcester (FH, WELC).

*C. dendroides* (Hedw.) Web. & Mohr — Berkshire (7); Bristol (13).

## HEDWIGIACEAE

*Hedwigia ciliata* (Hedw.) P. Beauv. — Berkshire (1, 16, 23, CUW, NEBC); Bristol (13, 21, NEBC); Essex (22, 23, FH, NEBC, PM); Franklin (FH); Hampshire (CUW, MASS, NEBC); Middlesex (10, 11, 27, FH, NEBC); Norfolk (11, FH, FJH, NEBC, WELC); Suffolk (11, 28, NEBC); Worcester (CUW, FH, NEBC).

## LEUCODONTACEAE

*Forsstroemia trichomitria* (Hedw.) Lindb. (*Leptodon trichomitria*) — Berkshire (16, NEBC, WELC); Bristol (13, NEBC); Essex (EMD, NEBC, WELC); Middlesex (10, 27, NEBC).

*Leucodon brachypus* Brid. — Bristol (13); Essex (22, 23, FH); Middlesex (10, 23); Suffolk (WELC).

*L. julaceus* (Hedw.) Sull. — Bristol (13, FH); Norfolk (11); Suffolk (11).

*L. sciuroides* (Hedw.) Schwaegr. — Berkshire (1, CUW, EMD, FH, FJH); Essex (FH); Hampden (EMD, WELC); Middlesex (FH); Norfolk (FH).

## NECKERACEAE

*Homalia jamesii* Schimp. — Berkshire (4, FH, NEBC); Worcester (NEBC).

*Neckera complanata* (Hedw.) Hueb. — Middlesex (10, 27).

*N. pennata* Hedw. — Berkshire (1, 16, NEBC, WELC); Bristol (13,



NEBC); Essex (22, 23, NEBC, PM); Middlesex (10, 27); Norfolk (NEBC); Plymouth (23); Worcester (23, MASS).

*Porotrichum alleghaniense* (C. Muell.) Grout — Berkshire (CUW, EMD, FJH, NEBC); Franklin (MASS); Hampshire (EMD); Middlesex (10, 11, FH, NEBC); Plymouth (23); Suffolk (11); Worcester (CUW, EMD, NEBC).

## LEMBOPHYLLACEAE

*Pseudisothecium myosuroides* (Hedw.) Grout — Essex (15, FH, FJH, NEBC).

## THELIACEAE

*Myurella julacea* (Schwaegr.) B. S. G. — Plymouth (23).

*M. sibirica* (C. Muell.) Reim. (*M. careyana*) — Berkshire (3, EMD, WELC); Franklin (MASS).

*Thelia asprella* Sull. — Bristol (13, FH, NEBC); Essex (22, NEBC, PM); Hampden (FH); Hampshire (MASS); Middlesex (10, 27, EMD, FH, NEBC); Norfolk (11, EMD, FH, NEBC, WELC); Suffolk (11); Worcester (CUW, EMD, FH, NEBC).

*T. asprella* var. *lescurii* (Sull.) Habeeb (*T. lescurii*) — Essex (22).

*T. hirtella* (Hedw.) Sull. — Barnstable (FH); Bristol (13, 21, EMD, FH, NEBC); Essex (22, FH, NEBC, PM); Middlesex (10, 27, FH, FJH, NEBC); Nantucket (20); Norfolk (11, EMD, FH, NEBC, WELC); Plymouth (FH); Suffolk (11, 28, FH, NEBC); Worcester (MASS, NEBC).

## FABRONIACEAE

*Anacamptodon splachnoides* (Froehl.) Brid. — Berkshire (3); Franklin (NEBC); Middlesex (FH); Norfolk (EMD).

## LESKEACEAE

*Lescuraea patens* (Lindb.) Arn. & C. Jens. (*Pseudoleskea patens*) — Bristol (13).

*Leskea gracilescens* Hedw. — Middlesex (23).

*L. obscura* Hedw. — Berkshire (CUW); Essex (22, EMD, FH, FJH, PM); Middlesex (FH); Norfolk (11, FH, WELC); Suffolk (11, NEBC); Worcester (CUW, EMD, FH, NEBC).

*L. polycarpa* Hedw. — Berkshire (CUW); Bristol (13); Essex (22, 23, EMD, FJH, PM); Hampden (FH); Hampshire (MASS); Middlesex (EMD, FH, NEBC, WELC); Worcester (CUW, EMD).

*Leskeella nervosa* (Schwaegr.) Loesk. (*Leskea nervosa*) — Berkshire (4); Bristol (13).

## THUIDIACEAE

*Abietinella abietina* (Hedw.) Fleisch. (*Thuidium abietinum*) — Berkshire (7).

*Anomodon attenuatus* (Hedw.) Hueb. — Berkshire (1, 7, EMD, NEBC); Bristol (13, 21, FH, NEBC); Essex (22, FH, NEBC, PM); Franklin (MASS); Hampden (WELC); Hampshire (MASS); Middlesex (10, 23, 27, FH, NEBC); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (NEBC); Suffolk (NEBC); Worcester (FH, NEBC).

*A. minor* (P. Beauv.) Lindb. — Essex (NEBC); Franklin (FH); Hampshire (MASS); Middlesex (10, 27, FH, NEBC); Norfolk (FH, NEBC).

*A. rostratus* (Hedw.) Schimp. — Berkshire (2, NEBC, WELC); Bristol (13, 21, EMD, FH, NEBC); Essex (22, FH, NEBC, PM); Franklin (MASS); Hampshire (MASS); Middlesex (10, EMD, FH); Norfolk (11, EMD, FH, FJH, NEBC, WELC); Plymouth (FH); Suffolk (11, NEBC); Worcester (FH).

*A. rugelii* (C. Muell.) Keissl. — Berkshire (1, NEBC, WELC); Bristol (13); Hampden (WELC).

*Haplocladium virginianum* (Hedw.) Broth. (*Thuidium virginianum*) — Bristol (15, NEBC); Middlesex (15, EMD, WELC); Norfolk (15, WELC); Suffolk (15, NEBC); Worcester (15, FH).

*Haplohymenium triste* (Ces.) Kindb. (*Anomodon tristis*) — Bristol (13, NEBC).

*Helodium paludosum* (Sull.) Aust. — Berkshire (3); Bristol (13, 21, EMD, FH); Essex (22, EMD, FH, NEBC, PM); Middlesex (10, FH, NEBC, WELC); Nantucket (20); Norfolk (EMD, FH, NEBC, WELC); Plymouth (FH); Suffolk (11, NEBC); Worcester (FH, NEBC).

*Rauiella scita* (P. Beauv.) Reim. (*Thuidium scitum*) — Berkshire (2); Bristol (13, FH); Essex (FH); Hampshire (MASS); Middlesex (10, FH); Norfolk (FH, WELC); Worcester (EMD).

*Thuidium allenii* Aust. — Bristol (13).

*T. delicatulum* (Hedw.) Mitt. — Barnstable (FH); Berkshire (1, 7, FH, NEBC, WELC); Bristol (13, 21, NEBC); Essex (22, FH, NEBC, PM); Franklin (FH, MASS); Hampden (NEBC); Hampshire (FH, MASS, NEBC); Middlesex (10, 27, EMD, FH, FJH, NEBC, WELC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Suffolk (11, NEBC); Worcester (CUW, EMD, FH, MASS, NEBC).

*T. minutulum* (Hedw.) B. S. G. — Berkshire (16); Bristol (13); Middlesex (FH); Norfolk (FH); Plymouth (23, NEBC).

*T. recognitum* (Hedw.) Lindb. — Barnstable (FH); Berkshire (FH); Essex (22, FH, NEBC, PM); Middlesex (FH); Norfolk (11); Suffolk (11, NEBC).

#### AMBLYSTEGIACEAE

*Amblystegiella confervoides* (Brid.) Loesk. — Berkshire (6).

*A. subtilis* (Hedw.) Loesk. — Berkshire (6); Franklin (FH); Hampshire (NEBC); Middlesex (FH); Norfolk (FJH, WELC); Suffolk (MASS).

*Amblystegium juratzkanum* Schimp. — Bristol (21); Essex (NEBC); Middlesex (EMD, FH, FJH, NEBC); Suffolk (NEBC).

*A. serpens* (Hedw.) B. S. G. — Berkshire (2, 16, NEBC); Bristol (13); Essex (22, FH, PM); Middlesex (10, 23, 27, EMD, FH, WELC); Norfolk (NEBC); Plymouth (NEBC); Suffolk (28, NEBC); Worcester (EMD, FH, NEBC).

*A. varium* (Hedw.) Lindb. — Berkshire (3, NEBC, WELC); Bristol (13, FJH); Essex (FH); Franklin (NEBC); Hampden (FH); Middlesex (FH, NEBC); Norfolk (FH, WELC); Suffolk (FH, NEBC); Worcester (FH).

*Calliargon cordifolium* (Hedw.) Kindb. — Bristol (13, 21, NEBC); Essex (22, FH, NEBC, PM); Middlesex (10, FH, NEBC, WELC); Nantucket

(20); Norfolk (11, FH, NEBC); Plymouth (23, FH); Suffolk (11, 23); Worcester (CUW, FH, NEBC).

*Calliergonella cuspidata* (Brid.) Loesk. — Berkshire (3); Bristol (13); Essex (NEBC, WELC); Franklin (MASS); Middlesex (27, NEBC, WELC); Worcester (NEBC).

*Campylium chrysophyllum* (Brid.) Bryhn — Berkshire (NEBC, WELC); Essex (22, CUW, NEBC, PM); Middlesex (10, 27, FH); Norfolk (FH, NEBC); Worcester (CUW, FH, NEBC).

*C. hispidulum* (Brid.) Mitt. — Berkshire (2, FJH, WELC); Bristol (13, FH); Essex (22, FH, NEBC); Hampshire (EMD, FJH); Middlesex (10, 27, EMD); Norfolk (FH, WELC); Suffolk (28, NEBC); Worcester (NEBC).

*C. polygamum* (B. S. G.) Bryhn — Barnstable (15, FJH, NEBC); Middlesex (15, EMD, FH).

*C. radicale* (P. Beauv.) Grout — Middlesex (FH, NEBC); Suffolk (11); Worcester (WELC).

*C. stellatum* (Hedw.) Lang. & C. Jens — Barnstable (12); Berkshire (4); Essex (22, NEBC, PM).

*Cratoneuron filicinum* (Hedw.) Roth — Berkshire (6).

*Drepanocladus aduncus* (Hedw.) Warnst. — Bristol (21); Essex (FH, NEBC, PM); Middlesex (10, 27, FH, FJH, NEBC); Worcester (25, CUW).

*D. aduncus* var. *kneiffii* (B. S. G.) Moenk. — Bristol (21); Middlesex (FH); Norfolk (FH); Worcester (WELC).

*D. aduncus* var. *polycarpus* (Bland.) Warnst. — Essex (NEBC); Nantucket (20).

*D. exannulatus* (B. S. G.) Warnst. — Bristol (13).

*D. fluitans* (Hedw.) Warnst. — Barnstable (FH, NEBC); Bristol (13); Essex (FH, NEBC, PM); Middlesex (10, 23, EMD, FH, FJH, NEBC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Suffolk (11); Worcester (CUW, EMD, NEBC, WELC).

*D. fluitans* var. *falcatus* (B. S. G.) Roth — Nantucket (20); Worcester (CUW).

*D. uncinatus* (Hedw.) Warnst. — Berkshire (1); Bristol (13); Essex (FH, PM); Hampshire (EMD, FJH); Worcester (CUW, NEBC, WELC).

*Hygroamblystegium fluviatile* (Hedw.) Loesk. — Essex (15, FH, NEBC, PM); Middlesex (15, FH, NEBC); Norfolk (15, WELC); Plymouth (15, EMD); Suffolk (15, NEBC).

*H. orthocladon* (P. Beauv.) Loesk. — Bristol (13, EMD); Hampshire (MASS); Middlesex (10, 11, 27, FH, NEBC); Norfolk (FH); Suffolk (NEBC); Worcester (FJH, NEBC, WELC).

*H. tenax* (Hedw.) Jenn. (*H. irriguum*) — Berkshire (2); Bristol (13, EMD); Essex (FH, NEBC); Franklin (NEBC); Middlesex (10, EMD, FH, FJH); Norfolk (FH); Worcester (FH, NEBC, WELC).

*Hygrohypnum dilatatum* (Wils.) Loesk. — Berkshire (2).

*H. eugyrium* (B. S. G.) Loesk. — Berkshire (2, FH, NEBC); Hampshire (MASS).

*H. luridum* (Hedw.) Jenn. (*H. palustre*) — Norfolk (FH); Worcester (CUW).

*H. montanum* (Wils.) Broth. — Berkshire (4, CUW); Worcester (CUW).

*H. ochraceum* (Turn.) Loesk. — Berkshire (CUW, NEBC); Bristol (13); Hampshire (MASS); Middlesex (FH); Norfolk (NEBC); Worcester (EMD, FH, FJH, NEBC).

*Leptodictyum riparium* (Hedw.) Warnst. — Barnstable (FH); Berkshire (MASS); Bristol (13, 21); Essex (FH, NEBC); Hampden (FH); Middlesex (10, 23, EMD, FH, FJH, NEBC, WELC); Nantucket (20, NEBC); Norfolk (11, FH, NEBC); Plymouth (23); Suffolk (11, NEBC); Worcester (25, CUW, FH, NEBC, WELC).

*L. trichopodium* var. *kochii* (B. S. G.) Broth. — Essex (15, FH, NEBC); Middlesex (15, FH, NEBC, WELC); Worcester (15, EMD).

*Platyhypnidium rusciforme* (Hedw.) Fleisch. (*Eurhynchium rusciforme*) — Berkshire (2, CUW, FH, NEBC); Bristol (13, EMD); Essex (22, PM); Franklin (MASS); Hampshire (MASS, WELC); Middlesex (10, FH, NEBC); Norfolk (FH); Suffolk (11, NEBC, WELC); Worcester (CUW, NEBC, WELC).

*Platylomella lescurii* (Sull.) Andrews (*Sciaromium lescurii*) — Bristol (13); Essex (12, EMD, NEBC); Hampshire (MASS).

## BRACHYTHECIACEAE

*Brachythecium acutum* (Mitt.) Sull. — Berkshire (NEBC); Essex (FH); Nantucket (20); Norfolk (WELC); Worcester (25, EMD, MASS).

*B. campestre* B. S. G. — Bristol (13, EMD); Essex (22, 23, PM); Middlesex (EMD, FH); Norfolk (FH).

*B. digastrum* C. Muell. & Kindb. — Bristol (13, FJH, NEBC, WELC); Worcester (WELC).

*B. flagellare* (Hedw.) Jenn. (*B. plumosum*) — Berkshire (3, FH); Bristol (13, 21); Essex (22, EMD, FH, PM); Hampshire (MASS); Middlesex (10, 27, EMD, FH, NEBC); Norfolk (11, FH, NEBC); Plymouth (NEBC, WELC); Suffolk (11, NEBC); Worcester (FH).

*B. flexicaule* Ren. & Card. — Berkshire (FH); Bristol (13, EMD, FH, FJH, NEBC); Middlesex (FH); Norfolk (FH).

*B. oxycladon* (Brid.) Jaeg. & Sauerb. — Berkshire (3, CUW, FJH, NEBC); Bristol (13, NEBC, WELC); Essex (22, PM); Middlesex (10, 27, EMD, FJH, NEBC); Norfolk (NEBC, WELC); Suffolk (11, NEBC); Worcester (CUW, NEBC).

*B. populeum* (Hedw.) B. S. G. — Berkshire (FH); Bristol (13); Essex (22, FH); Middlesex (10, 27, FH, NEBC); Norfolk (11); Suffolk (11, 28, NEBC).

*B. reflexum* (Stark.) B. S. G. — Berkshire (1); Bristol (13).

*B. rivulare* B. S. G. — Berkshire (3, CUW, FH, NEBC); Bristol (13); Essex (FH); Franklin (FH); Hampden (NEBC); Hampshire (FH); Middlesex (EMD, FH, NEBC, WELC); Norfolk (NEBC, WELC); Worcester (CUW, FJH, WELC).

*B. rutabulum* (Hedw.) B. S. G. — Berkshire (4, 16, CUW, NEBC);

Bristol (13); Essex (22, EMD, FH, NEBC, PM); Franklin (FH); Hampshire (FJH, MASS); Middlesex (10, 27, EMD, FH, FJH, WELC); Norfolk (11, FH, NEBC, WELC); Suffolk (11, 28, CUW, NEBC); Worcester (23, CUW, NEBC).

*B. rutabulum* var. *flavescens* (Brid.) B. S. G. — Bristol (13); Suffolk (12).

*B. salebrosum* (Web. & Mohr) B. S. G. — Berkshire (1, 16); Bristol (13); Essex (22, 23, EMD, FH, FJH); Middlesex (10, 27, EMD, NEBC, WELC); Norfolk (11, FH, FJH, WELC); Plymouth (23, FH); Suffolk (11, 28, NEBC); Worcester (CUW, EMD, MASS, NEBC).

*B. starkei* (Brid.) B. S. G. — Berkshire (1); Bristol (13); Essex (EMD, FH, FJH, NEBC); Nantucket (20); Worcester (CUW, NEBC).

*B. velutinum* (Hedw.) B. S. G. — Berkshire (CUW, FH, NEBC); Bristol (13); Essex (22, PM); Hampshire (FH); Middlesex (10, FH, NEBC); Norfolk (FH, WELC); Suffolk (CUW, NEBC); Worcester (FH, NEBC).

*Bryhnia graminicolor* (Brid.) Grout — Berkshire (3).

*B. novae-angliae* (Sull. & Lesq.) Grout — Berkshire (6, NEBC); Bristol (13, 21, WELC); Essex (22, FH, NEBC, PM); Franklin (MASS); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, NEBC); Suffolk (11, NEBC); Worcester (FH).

*Camptothecium nitens* (Hedw.) Schimp. — Berkshire (NEBC); Bristol (13).

*Chamberlainia acuminata* (Hedw.) Grout — Berkshire (16); Bristol (13, FJH); Essex (22, PM); Middlesex (10, NEBC); Plymouth (23).

*C. acuminata* var. *rupincola* (Sull. & Lesq.) Grout — Bristol (13).

*C. cyrtophylla* (Kindb.) Grout — Bristol (13).

*Cirriphyllum boscii* (Schwaegr.) Grout — Berkshire (3); Bristol (13, 21, EMD, FH, FJH, NEBC, WELC); Essex (FH, NEBC); Hampshire (FH); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (FH, NEBC, WELC); Plymouth (23); Suffolk (11, CUW, NEBC).

*C. piliferum* (Hedw.) Grout — Bristol (13).

*Eurhynchium pulchellum* (Hedw.) Jenn. (*E. strigosum*) — Berkshire (2, CUW); Bristol (13); Essex (22, NEBC, PM); Hampden (CUW); Middlesex (FH); Norfolk (11, FH); Plymouth (23); Suffolk (11, NEBC); Worcester (MASS).

*E. pulchellum* var. *scabrisetum* (Grout) Ketchl. (*E. strigosum* var. *scabrisetum*) — Dukes (12).

*Homalotheciella subcapillata* (Hedw.) Card. — Bristol (13, NEBC).

*Oxyrrhynchium hians* (Hedw.) Loesk. (*Eurhynchium hians*) — Bristol (13); Plymouth (23).

*Rhynchostegium serrulatum* (Hedw.) Jaeg. & Sauerb. (*Eurhynchium serrulatum*) — Berkshire (3, NEBC, WELC); Bristol (13, 21, FH); Essex (22, 23, FH, NEBC); Middlesex (10, 23, 27, EMD, FH, FJH, NEBC, WELC); Norfolk (11, CUW, FH, NEBC, WELC); Plymouth (23); Suffolk (11, NEBC); Worcester (CUW, NEBC, WELC).

#### ENTODONTACEAE

*Entodon cladorrhizans* (Hedw.) C. Muell. — Berkshire (2, CUW, FH, NEBC, WELC); Bristol (13, NEBC); Essex (22, 23, FH, PM); Hamp-

shire (FJH); Middlesex (10, 23, 27, FH, NEBC); Norfolk (FH, WELC); Plymouth (NEBC); Worcester (CUW, FH, NEBC, WELC).

*E. compressus* (Hedw.) C. Muell. — Essex (23); Plymouth (23).

*E. seductrix* (Hedw.) C. Muell. — Berkshire (2); Bristol (13, 21, NEBC); Middlesex (10, 23, 27, FH, NEBC); Norfolk (11, FH, WELC); Suffolk (11, 28, NEBC); Worcester (FH, WELC).

*Pleurozium schreberi* (Brid.) Mitt. (*Calliergonella schreberi*) — Berkshire (1, 7, CUW, FH, NEBC); Bristol (13, NEBC); Essex (22, 23, EMD, FH, PM); Hampshire (EMD, MASS); Middlesex (10, 11, 27, EMD, FH, NEBC); Norfolk (11, FH); Plymouth (23); Suffolk (11, FH, NEBC); Worcester (EMD, FJH, NEBC).

*Pterygynandrum filiforme* Hedw. — Berkshire (6); Essex (EMD, FH, NEBC); Middlesex (10, NEBC); Norfolk (CUW).

#### PLAGIOTHECIACEAE

*Plagiothecium denticulatum* (Hedw.) B. S. G. — Berkshire (1, 16, CUW, FH, NEBC); Bristol (13, 21, NEBC); Essex (FH, NEBC, PM); Franklin (FH); Hampden (MASS); Middlesex (10, 11, 27, FH, NEBC); Norfolk (EMD, FH, FJH, WELC); Plymouth (NEBC); Suffolk (FH, NEBC); Worcester (CUW, EMD, FH).

*P. elegans* (Hook.) Sull. — Bristol (13); Hampshire (FH); Middlesex (EMD, FH); Worcester (FH).

*P. latebricola* (Wils.) B. S. G. — Essex (17, FH, NEBC); Middlesex (FH); Norfolk (FH); Worcester (CUW, EMD).

*P. micans* (Sw.) Par. — Bristol (13).

*P. micans* var. *fulvum* (Hook. & Wils.) Par. — Bristol (13).

*P. roeseanum* (Hamp.) B. S. G. — Essex (15, NEBC, WELC); Franklin (15, EMD); Hampshire (15, EMD).

*P. ruthei* Limpr. — Worcester (12).

*P. sylvaticum* (Brid.) B. S. G. — Berkshire (2, CUW, EMD); Essex (22, NEBC, PM); Middlesex (10, NEBC, WELC); Nantucket (20); Norfolk (FH, WELC); Suffolk (NEBC).

*P. turfaceum* (Lindb.) Lindb. — Berkshire (1, FH, WELC); Essex (22, FH, NEBC, PM); Franklin (FH).

#### SEMATOPHYLLACEAE

*Brotherella delicatula* (Jam.) Fleisch. — Berkshire (15, NEBC).

*B. recurvans* (Michx.) Fleisch. — Berkshire (2, CUW, FH, NEBC, WELC); Bristol (13, FH, NEBC); Franklin (FH); Middlesex (FH, FJH); Norfolk (FH, NEBC, WELC); Worcester (CUW).

*Heterophyllum haldanianum* (Grev.) Roth — Berkshire (2, 7, 16, CUW, FH, NEBC, WELC); Bristol (13, 21, FH, NEBC); Dukes (WELC); Essex (22, FH, NEBC, PM); Franklin (MASS); Hampden (MASS); Hampshire (EMD); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, FJH, NEBC, WELC); Suffolk (11, CUW, NEBC); Worcester (CUW, EMD, FH, WELC).

*Sematophyllum adnatum* (Michx.) Britt. — Bristol (13).

*S. carolinianum* (C. Muell.) Britt. — Bristol (13).

## HYPNACEAE

*Ctenidium molluscum* (Hedw.) Mitt. (*Hypnum molluscum*) — Berkshire (6); Bristol (13); Essex (FH, NEBC); Middlesex (10, 27, EMD); Norfolk (EMD, NEBC); Plymouth (23); Suffolk (NEBC); Worcester (FH).

*Dolichotheca striatella* (Brid.) Loesk. (*Plagiothecium striatellum*) — Berkshire (CUW, EMD, FH, NEBC); Bristol (13, 21, EMD, FH); Essex (22, FH, NEBC, PM); Franklin (MASS); Hampden (NEBC); Middlesex (10, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (CUW, FJH, NEBC); Worcester (CUW, EMD, NEBC).

*Homomallium adnatum* (Hedw.) Broth. — Berkshire (2); Bristol (13); Essex (22, 23, FH, NEBC); Middlesex (NEBC, WELC); Norfolk (FH, NEBC, WELC); Plymouth (FH); Suffolk (11, 28, NEBC); Worcester (EMD, MASS, NEBC, WELC).

*Hypnum cupressiforme* Hedw. — Berkshire (2, 16, FJH); Bristol (13, 21); Essex (22, 23, EMD, FH, NEBC, PM, WELC); Middlesex (10, 23, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, EMD, FH, WELC); Plymouth (23, FH); Suffolk (11, 28, NEBC).

*H. cupressiforme* var. *filiforme* Brid. — Essex (CUW, NEBC); Plymouth (23).

*H. cupressiforme* var. *resupinatum* (Wils.) Schimp. — Essex (22).

*H. cupressiforme* var. *subjulaceum* Mol. — Bristol (15, NEBC, WELC); Middlesex (15, FH).

*H. curvifolium* Hedw. — Berkshire (2, CUW); Bristol (13, NEBC); Essex (22, NEBC, PM); Hampden (FH, NEBC); Middlesex (FH, WELC); Norfolk (FH, NEBC, WELC); Plymouth (23, FH); Suffolk (CUW, WELC); Worcester (CUW, NEBC).

*H. fertile* Sendtn. — Berkshire (15, CUW); Bristol (15, EMD); Middlesex (15, WELC); Suffolk (15, NEBC).

*H. imponens* Hedw. — Barnstable (FH); Berkshire (2, 16, CUW, FH, NEBC, WELC); Bristol (13, 21, FH); Essex (22, 23, PM); Franklin (FH, MASS, NEBC); Middlesex (10, FH, FJH, NEBC, WELC); Norfolk (11, CUW, FH, NEBC, WELC); Plymouth (23, FH); Suffolk (NEBC); Worcester (CUW).

*H. lindbergii* Mitt. (*H. arcuatum*) — Barnstable (FH); Bristol (13); Essex (FH, NEBC); Middlesex (EMD, FH).

*H. pratense* Koch — Berkshire (1, EMD); Worcester (CUW).

*H. reptile* Michx. — Berkshire (2, CUW, FH, NEBC); Bristol (13, 21); Essex (22, FH, NEBC, PM); Franklin (FH, MASS); Hampshire (EMD, FJH, WELC); Middlesex (10, 27, EMD, FH, NEBC, WELC); Nantucket (20); Norfolk (EMD, FH, FJH, NEBC, WELC); Suffolk (11, 23, CUW, NEBC); Worcester (FJH, NEBC, WELC).

*H. vaucheri* Lesq. — Essex (15, NEBC).

*Platygyrium repens* (Brid.) B. S. G. — Bristol (13, 21, NEBC); Essex (NEBC); Hampden (FH); Hampshire (FJH); Middlesex (FH, NEBC); Norfolk (EMD); Worcester (EMD, FH);

*Ptilium crista-castrensis* (Hedw.) De Not. (*Hypnum crista-castrensis*) — Berkshire (1, 16, CUW, FH, NEBC, WELC); Bristol (13); Essex

(22, 23, FH, NEBC, PM); Franklin (FH); Hampden (NEBC, WELC); Hampshire (MASS); Middlesex (10, 27, NEBC); Norfolk (FH); Suffolk (11, NEBC); Worcester (23, CUW).

*Pylaisia intricata* (Hedw.) B. S. G. — Barnstable (FH); Berkshire (1, 3, 16); Bristol (13); Essex (22, 23, FH, PM); Hampshire (MASS); Middlesex (10, 23, 27, CUW, FH, WELC); Norfolk (11, FH); Plymouth (23); Suffolk (11); Worcester (CUW).

*P. jamesii* Sull. & Lesq. — Suffolk (12, FH).

*P. polyantha* B. S. G. — Plymouth (23).

*P. selwynii* Kindb. — Berkshire (NEBC); Bristol (13, NEBC); Essex (FH); Hampden (NEBC); Hampshire (FJH); Middlesex (FH, NEBC); Norfolk (NEBC); Plymouth (NEBC); Suffolk (NEBC); Worcester (FH, NEBC).

*P. subdenticulata* Schimp. — Bristol (13).

## HYLOCOMIACEAE

*Hylocomium brevirostre* (P. Beauv.) B. S. G. — Berkshire (3, FH, NEBC); Bristol (13); Essex (22).

*H. splendens* (Hedw.) B. S. G. — Berkshire (1, 7, CUW, FH, NEBC, WELC); Bristol (13, FH, NEBC); Essex (22, 23, FH, PM); Hampden (FH, NEBC); Hampshire (EMD, MASS); Middlesex (10, 23, 27, FH, NEBC); Norfolk (11, FH, NEBC); Plymouth (23); Worcester (EMD, FH, FJH, NEBC, WELC).

*H. umbratum* (Hedw.) B. S. G. — Berkshire (2).

*Rhytidiadelphus squarrosus* (Hedw.) Warnst. — Bristol (13); Essex (17, NEBC); Worcester (EMD, NEBC).

*R. triquetrus* (Hedw.) Warnst. — Berkshire (1, 7, 16, CUW, NEBC, WELC); Bristol (13, NEBC); Essex (22, 23, FH, NEBC, PM); Franklin (MASS); Hampden (FH); Hampshire (MASS); Middlesex (10, 23, 27, EMD, NEBC, WELC); Norfolk (11, FH, WELC); Plymouth (23); Worcester (CUW).

## BUXBAUMIACEAE

*Buxbaumia aphylla* Hedw. — Barnstable (23); Bristol (13, 21, NEBC); Dukes (NEBC); Essex (FH, NEBC, PM); Franklin (FH); Hampden (FH, NEBC); Middlesex (10, 27, EMD, FH, NEBC); Norfolk (11, CUW, FH, NEBC, WELC); Plymouth (23, FH, NEBC); Suffolk (11, NEBC); Worcester (CUW, FH, NEBC).

*B. subcylindrica* Grout — Berkshire (2).

*Diphyscium foliosum* (Hedw.) Mohr — Barnstable (23); Berkshire (1, FH, NEBC); Bristol (13, 21, EMD, NEBC); Essex (17, 22, 23, FH, NEBC, PM); Hampden (NEBC); Hampshire (23, MASS, NEBC); Middlesex (10, 27, EMD, FH, NEBC); Norfolk (11, FH, NEBC, WELC); Plymouth (23, NEBC); Suffolk (11, NEBC); Worcester (CUW, NEBC, WELC).

## POLYTRICHACEAE

*Atrichum angustatum* (Brid.) B. S. G. — Berkshire (1, CUW); Bristol (13, 21, NEBC); Essex (22, 23, FH, NEBC, PM); Hampshire (CUW, NEBC); Middlesex (10, 23, 27, EMD, FH, NEBC, WELC); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (NEBC); Suffolk (11, 28, FH, NEBC); Worcester (MASS, NEBC, WELC).



*A. crispum* (Jam.) Sull. — Bristol (13); Dukes (WELC); Essex (17, CUW, NEBC); Hampshire (MASS); Middlesex (EMD, NEBC); Norfolk (FJH).

*A. undulatum* (Hedw.) P. Beauv. — Berkshire (1, FH, WELC); Bristol (13, 21, NEBC); Essex (NEBC, PM); Franklin (MASS); Hampden (FH); Hampshire (MASS); Middlesex (10, 23, FH, NEBC, WELC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Plymouth (23); Suffolk (11, FH, NEBC); Worcester (FH). ..

*Pogonatum alpinum* (Hedw.) Roehl. — Berkshire (1); Essex (17, FH).

*P. capillare* (Michx.) Brid. — Berkshire (2, 24, CUW, FH, FJH, NEBC).

*P. pensilvanicum* (Hedw.) Par. — Barnstable (NEBC); Berkshire (3, CUW, FH, NEBC); Bristol (13, 21, NEBC); Essex (22, 23, FH, NEBC); Franklin (MASS); Middlesex (10, 23, EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Plymouth (23); Suffolk (11, FH, NEBC); Worcester (EMD, FJH).

*P. urnigerum* (Hedw.) P. Beauv. — Berkshire (1, FH); Worcester (NEBC).

*Polytrichum commune* Hedw. — Barnstable (FH); Berkshire (1, CUW); Bristol (13, 21, NEBC); Essex (22, 23, EMD, FH, NEBC, PM); Franklin (MASS); Hampden (FH); Middlesex (10, 11, 27, EMD, FH, NEBC); Nantucket (20); Norfolk (11, FH, NEBC, WELC); Plymouth (FH); Suffolk (11, 28, FH, NEBC); Worcester (CUW, EMD, FH, FJH, MASS).

*P. commune* var. *perigoniale* (Michx.) B. S. G. — Barnstable (NEBC); Berkshire (16, FH); Bristol (FH, NEBC); Middlesex (EMD, FH, NEBC); Norfolk (EMD, FH, WELC); Suffolk (NEBC); Worcester (FH, NEBC, WELC).

*P. formosum* Hedw. — Bristol (13); Middlesex (10, 27).

*P. gracile* Sm. — Bristol (13); Essex (22, 23); Middlesex (FH); Worcester (EMD, FH, NEBC).

*P. juniperinum* Hedw. — Berkshire (1, 16, CUW); Bristol (13, NEBC); Essex (22, FH, PM); Franklin (FH, NEBC); Hampden (NEBC); Middlesex (10, FH, NEBC); Norfolk (11, FH, FJH, NEBC, WELC); Plymouth (NEBC); Suffolk (11, 28, NEBC); Worcester (CUW, MASS).

*P. juniperinum* var. *alpestre* B. S. G. — Berkshire (NEBC); Bristol (13); Middlesex (EMD, FH); Nantucket (20); Norfolk (FH).

*P. ohioense* Ren. & Card. — Berkshire (1, CUW, FH, NEBC); Bristol (13, NEBC); Essex (FH, NEBC); Middlesex (EMD, FH, NEBC); Norfolk (11, FH, FJH, WELC); Plymouth (FH); Suffolk (11, NEBC); Worcester (CUW, FH, MASS).

*P. piliferum* Hedw. — Barnstable (FH, NEBC); Berkshire (1); Bristol (13, 21, FH, NEBC); Essex (22, 23, FH, NEBC, PM); Hampshire (EMD, MASS); Middlesex (10, 27, EMD, FH, FJH, NEBC); Nantucket (20); Norfolk (11, FH); Plymouth (NEBC); Suffolk (11, NEBC); Worcester (MASS, NEBC).

## NAMES OF DOUBTFUL APPLICATION

The species listed below have been reported for Massachusetts or just outside of the state's boundaries. In addition to their lack of precise location, many of these reports suffer from incorrect determination or errors in the application of names, as many represent taxa not found in America or at least not occurring in or near the New England area. The genera and species are arranged alphabetically.

*Anomodon viticulosus* (Hedw.) Hook. & Tayl. — Location uncertain. (9, 16).

*Barbula fallax* Hedw. — Location uncertain (9, 26).

*Brachelyma subulatum* (P. Beauv.) Card. — Middlesex (23); Plymouth (13).

*Bryum turbinatum* (Hedw.) Schwaegr. — Location uncertain. (16).

*Calliergon stramineum* (Brid.) Kindb. — Location uncertain. (26).

*Camptothecium lutescens* (Huds.) Bruch & Schimp. — Location uncertain. (16).

*Dichelyma falcatum* (Hedw.) Myr. — Location uncertain. (9, 26).

*Dichodontium pellucidum* (Hedw.) Schimp. — Location uncertain. (9, 26).

*Dicranum strictum* Schleich. — Essex (23); Plymouth (23).

*Entosthodon fascicularis* (Dicks.) C. Muell. — Middlesex (23).

*Eurhynchium praelongum* (Hedw.) Bruch & Schimp. — Location uncertain. (16).

*E. striatum* (Schreb.) Schimp. — Location uncertain. (16).

*Fontinalis biformis* Sull. — Location uncertain. (9, 26).

*F. disticha* Hook. & Wils. — Location uncertain. (9, 26).

*F. lescurii* var. *ramosior* Sull. — Location uncertain. (26).

*Grimmia pulvinata* (Hedw.) Sm. — Middlesex (23).

*Haplocladium microphyllum* (Hedw.) Broth. (*Thuidium microphyllum*) — Location uncertain. (16, 26).

*Helodium blandowii* (Web. & Mohr) Warnst. — Location uncertain. (9).

*Isothecium myurum* (Poll.) Brid. — Franklin (16).

*Kiaeria falcata* (Hedw.) Hag. (*Arctoa falcata*) — Suffolk (23).

*Leptodictyum siphon* (P. Beauv.) Broth. — Plymouth (23).

*Mnium longirostrum* Brid. — Location uncertain. (26).

*Oncophorus polycarpus* (Hedw.) Brid. — Location uncertain. (16).

*Orthotrichum speciosum* Nees — Location uncertain. (16).

*O. striatum* Hedw. — Middlesex (10).

*Philonotis muhlenbergii* (Schwaegr.) Brid. — Location uncertain. (26).

*Plagiopus oederi* (Brid.) Limpr. — Location uncertain. (16).

*Plagiothecium undulatum* (Hedw.) B. S. G. — Suffolk (23).

*Pogonatum aloides* (Hedw.) P. Beauv. — Berkshire (16).

- P. brachyphyllum* (Richs.) P. Beauv. — Berkshire (16).  
*Pohlia atropurpurea* (Wahlenb.) Lindb. f. — Bristol (13).  
*Pottia lanceolata* (Hedw.) C. Muell. — Berkshire (23).  
*Pseudoleskea catenulata* (Brid.) B. S. G. — Essex (23).  
*Rhacomitrium ellipticum* (Turn.) B. S. G. — Location uncertain.  
 (26).  
*Rhynchostegium murale* (Neck.) B. S. G. — Plymouth (23).  
*Thuidium tamariscinum* (Hedw.) B. S. G. — Middlesex (27).  
*Tortula mucronifolia* Schwaegr. — Location uncertain. (9, 26).  
*Ulota drummondii* (Hook. & Grev.) Brid. — Location uncertain.  
 (16).

It is hoped that the work outlined in this publication will stimulate latent interest in the taxonomy of mosses within Massachusetts. By using counties as basic geographical working units, clearly delimited areas which need considerable study have been indicated, and, by doing concentrated field work in these regions, it should be possible to close many of the glaring gaps in our knowledge of moss distribution. Furthermore, many local amateurs are intensely interested in the flora of their own counties and will work with great enthusiasm on "home territory." Only by using the talents and energy of both professional and amateur botanists, will our knowledge of the biogeography of Massachusetts be increased.

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LATE NEGATIVE GEOTROPISM IN CHELONE. — During a recent fall collecting trip in Adair County, Kentucky, several unusual specimens of *Chelone obliqua* L. were discovered in alluvial soil in a damp woodland in an area of low light intensity. Eight mature plants (deposited in the herbarium of Chicago Natural History Museum) growing within a radius of about 10 feet exhibited the same unique growth form, in that all stems, which had bent over as if in response to the weight of the terminal seed pods, in every case had again bent upward at a sharp angle about 2 inches from the terminus. On three plants the point of this sharp upward bend was 6 to 8 inches above the soil surface. Five taller plants which had fallen over enough to touch the soil had formed adventitious roots from the under side of the area of curvature. One immature plant which had fallen over was also bent upward at about  $\frac{1}{2}$  inch from the terminus, but had formed no roots.

*Chelone* is known to be a proto-hemicryptophyte, a semi-rosette form capable of producing runners. To my knowledge, neither propagation occurring by rooting from the stem nor such marked phototropism has previously been reported.

If the turning upward is a correlation phenomenon as the result of auxin induced formation of new roots, the interesting fact is that the negative geotropism takes place *before* the adventitious roots form. It is therefore suggested that *Chelone* would be a good selection for growth studies in the laboratory and in the field. — DOROTHY GIBSON, CHICAGO NATURAL HISTORY MUSEUM.